

Minnesota Fireworks Program



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MINNESOTA STATE FIRE MARSHAL DIVISION

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Webex Presentations

- Please submit any questions you have during this Webex presentation using the chat feature on the right-hand side of your screen
- We will try to answer questions in real-time and will pause after each section to ensure all questions are answered

POST Statement

The State Fire Marshal Division is a continuing education sponsor as approved by the Board of Peace Officer Standards and Training. This course Virtual Training-Minnesota Fireworks Program, Course Number 09272-0030 has been approved by the POST Board for continuing education credit. Peace officers who successfully complete this course will receive 01 hours of continuing education.

The sponsor of this course has a written policy for the investigation and resolution of allegations of classroom discrimination. This policy applies to all faculty, instructors, administrative staff, and students. A copy of the policy may be obtained from the sponsor by contacting the State Fire Marshal Division at 651/201-7200.

POST Affidavit of Attendance



Minnesota Board of Peace Officer Standards and Training

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Affidavit of Attendance

Beginning July 1, 2016, the POST Board will maintain continuing education credits for each officer who attends POST approved training. Continuing Education Sponsors are required to submit this "Affidavit of Attendance" form within 2 weeks after each training session. Even though the POST Board is maintaining continuing education credits, sponsors must continue to maintain a list of licensed peace officers and part-time peace officers who have successfully completed this course. We encourage sponsors to submit the "Affidavit of Attendance" via E-mail at POSTBoard.ContinuingEducation-Rosters@state.mn.us. We will also accept the rosters by mail or fax. This form can be found on the POST Board's website at www.post.state.mn.us under "Forms."

COURSE INFORMATION

Course Number:	Course Title:	POST Credits Approved:
Course Date(s) Attended:	Contact Person:	Email:
		Phone:
Sponsor Name:	Date Course Approved:	Date Course Expires:

ATTENDEES

License Number:	Attendee Name:	Date Attended	Hours Attended	License Number:	Attendee Name:	Date Attended	Hours Attended
1.				8.			
2.				9.			
3.				10.			
4.				11.			
5.				12.			
6.				13.			
7.				14.			

Sponsor Affirmation: As a representative of the continuing education sponsor, I affirm the information on this form is complete and accurate and those individuals listed attended for the number of hours indicated and successfully completed the course.

Sponsor Representative Signature:	Date:
Please Print Signature Written Above:	Phone:

Course Topics

- Minnesota fireworks program overview and SFMD changes
- Outdoor fireworks permits and inspections
- Retail sales of consumer fireworks
- There will be a pause between each section for questions

Key Terms

- Pyrotechnic Operator
 - Operator, Supervising operator
- Aerial fireworks mortar tube
 - Mortar, Tube, Gun
- AHJ
 - (Local) Authority having jurisdiction

Authority

- Minnesota Statute 624.20-624.25
- Minnesota State Fire Code (2020 Edition)
- NFPA 160, 2016 Edition
- NFPA 1123, 2018 Edition
- NFPA 1124, 2003 / 2017 Edition
- NFPA 1126, 2016 Edition

- NFPA website – Free Access

Minnesota Fireworks Program - Overview

Roles and Responsibilities

Minnesota Fireworks Program

- SFMD responsibilities:
 - Certify pyrotechnic operators
 - Issue indoor fireworks permits
 - Data management
 - Investigate fireworks incidents

Minnesota Fireworks Program

- Local jurisdiction responsibilities:
 - Retail sales of consumer fireworks
 - Issue outdoor fireworks permits
 - Issue indoor fireworks permits when delegated by the SFMD

SFMD Responsibilities

- Certify pyrotechnic operators (MS 624.22)
- New operators shall:
 - Pass an exam
 - Assist with (5) fireworks displays
 - Paperwork
- Existing operators shall:
 - Conduct or assist in (3) fireworks displays
 - Paperwork
- All certifications valid for (4) years

SFMD Responsibilities

- Operator certification (MS 624.22), SFMD Change
- Old way was to certify for 48-months
- New way to certify for (4) calendar years, expires 12/31 of that calendar year
- Change made due to:
 - COVID-19
 - Simplify renewal process
 - Gain consistency with other cert/lic programs

Fireworks Certification Card

- Old Card



Fireworks Certification Card

- New Card



Certification Card Issue

- SFMD certifies operators to NFPA 1123 or NFPA 1126, not “Outdoor” or “Proximate”
- An outdoor display could use either NFPA Standard
- Cards issued through attrition

SFMD Responsibilities

- Issue indoor pyrotechnic permits (MS 624.22)
- Unless delegated to the local jurisdiction by the SFMD
- If you come across an indoor fireworks display and didn't know about it, it's probably illegal
- If this occurs, contact SDO/SFMD/Chief Deputy or Chief Investigator/Deputy Rexeisen

SFMD Responsibilities

- Data management (MS 624.22)
- Maintain database of every certified pyrotechnician
- Maintain database of every submitted post-display report
- Do not maintain any records of every fireworks display in the state

SFMD Responsibilities

- Investigate incidents (MS 624.20-624.25, MSFC)
- Display incidents (Injuries or property damage)
 - Will work with or separate of AHJ, AHJ's preference
- SFMD is neutral in all cases
 - Will assist or take delegated authority due to "politics"

Local Jurisdiction Responsibilities

- Retail sales of consumer fireworks (MS 624.20)
 - “If it flies through the air or explodes, it’s illegal”
 - Can impose annual license fees
 - Cannot prohibit MN lawful consumer fireworks on private property
 - Cannot prohibit/deny retail sales in multi-commodity businesses
 - Can only prohibit/deny single commodity retail sales if all single commodity retail sales is prohibited

Local Jurisdiction Responsibilities

- Outdoor permits and inspections (MS 624.22)
 - Local AHJ responsible, SFMD will always help if asked
- Indoor permits and inspections (MS 624.22)
 - SFMD only unless delegated to local AHJ*

Outdoor Displays Permits and Inspection

Supervising Operator

- All pyrotechnic displays shall have a pyrotechnic operator certified by the SFMD on-site
- There is only one supervising operator, everyone else is an assistant
- The supervising operator doesn't necessarily have to actively participate

Permits

- “Shall Issue”, subject to mitigating issues
 - Burn restrictions
- Permit flow
 1. Application sent to city clerk/county auditor
 2. Application sent to Fire Chief (delegate) or County Sheriff (delegate)
 3. Permit processing and (on site) inspection
 4. If meeting codes and laws, permit approved, referred back to city clerk/county auditor for issuance

Permits

- Must be submitted to AHJ no later than 15 days prior to display date
- Gives time to the AHJ for permit processing and inspection
- This date is not “set in stone”

Permit Fees

- Permit fee required for indoor display permits
- Permit fee not required for outdoor display permits
- Nothing prohibits a local jurisdiction from requiring a permit fee via ordinance, \$150 maximum
- Insurance required for indoor displays, MS 466.04
- Insurance can be required by ordinance for outdoor displays, subject to MS 466.04

Permit Forms

- Many jurisdictions have their own fireworks application form
- SFMD website also offers a generic permit application form
- While not directly specified in MS 624.22, there are minimum items needed for the permit application

Permits

- Name of applicant (sponsor)
- Authorizing agent (if different)
- Contact information
- Date
- Time
- Location
- Size and number of fireworks
- Supervising operator
- Site plan
- Insurance (if required locally)
- Local requirements

Sponsors

- Public or private organization
 - \$\$\$
- Allowable sponsors
 - Fair boards, City of ..., Private business, ect.
- Non-allowable sponsors
 - John/Jane Q. Public, unaffiliated organizations
- Fireworks company can sponsor their own display

Size and Number of Fireworks

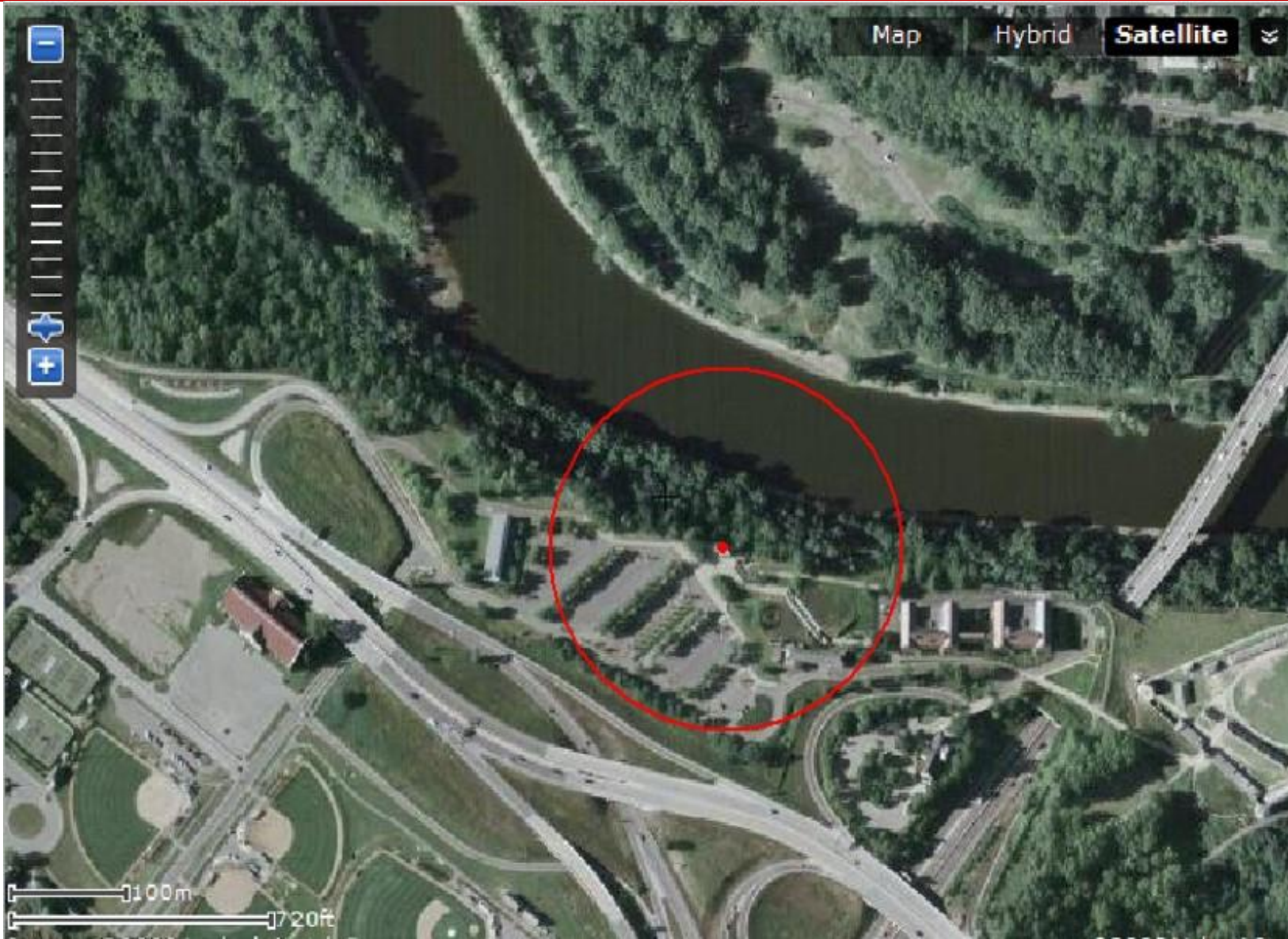
- Number of fireworks is of lower importance
 - Helpful in determining display duration
 - Subject to change based \$\$\$ and availability
- Single largest size of fireworks is the most important information to know
 - The entire display site is based off of the single largest aerial shell
 - If this is wrong, the entire inspection is wrong

NFPA 1123, Table 5.1.3.1

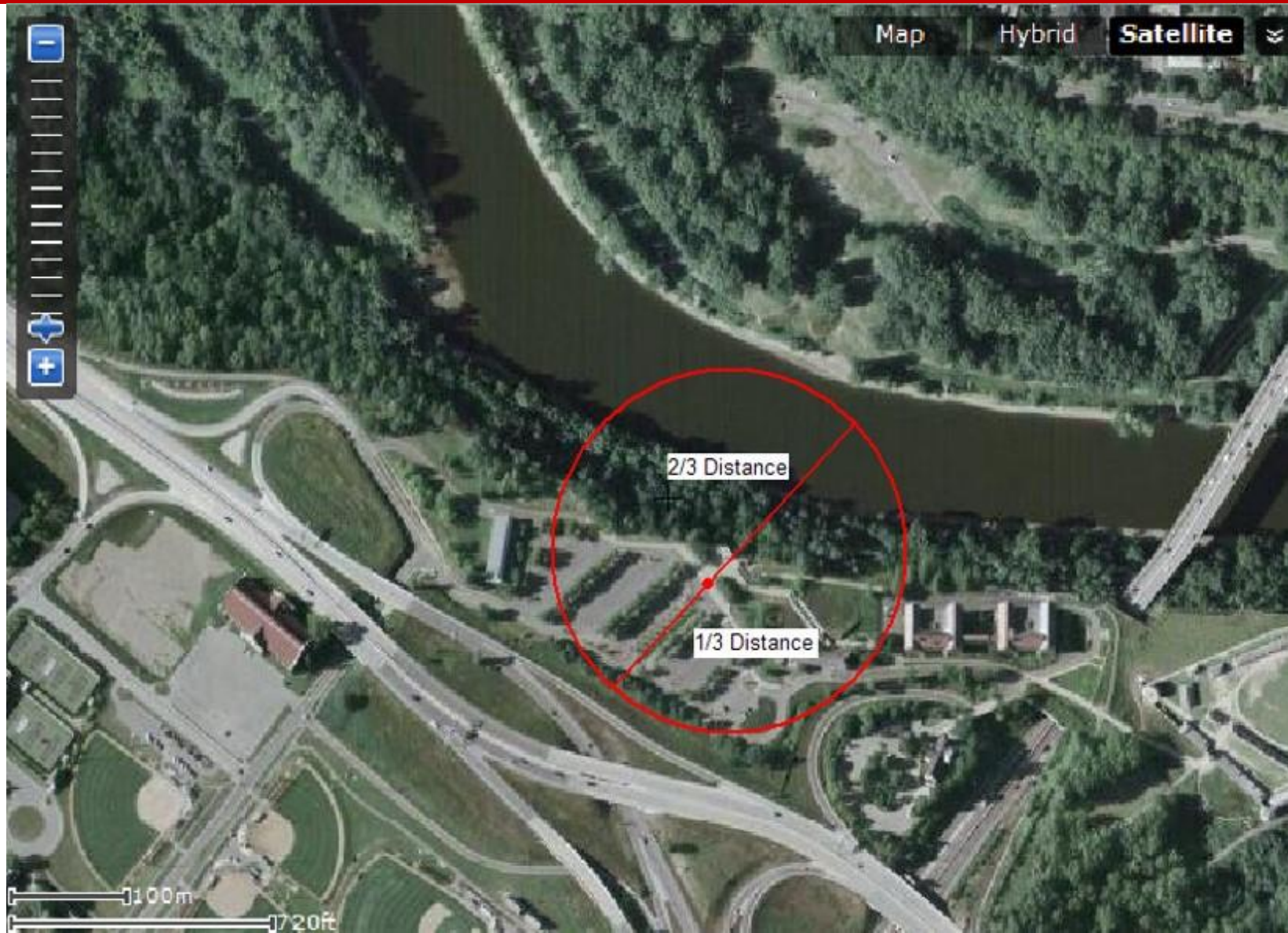
Table 5.1.3.1 Distances for Outdoor Aerial Shell Display Sites: Minimum Separation Distances from Mortars to Spectators for Land or Water Displays

Mortar Size ^a		Minimum Secured Diameter of Site ^b		Vertical Mortars ^c		Angled Mortars ^d 1/3 Offset		Mortars to Special Hazards ^e	
in.	mm	ft	m	ft	m	ft	m	ft	m
≤1	25	150	46	75	23	75	23	150	46
1.5	38	210	64	105	32	75	23	210	64
2	50	280	85	140	43	95	29	280	85
2.5	63	350	107	175	54	115	35	350	107
3	76	420	128	210	64	140	43	420	128
4	102	560	171	280	85	190	58	560	171
5	127	700	213	350	107	230	70	700	213
6	152	840	256	420	128	280	85	840	256
7	178	980	299	490	149	320	98	980	299
8	203	1120	341	560	171	370	113	1120	341
10	254	1400	427	700	213	460	140	1400	427
12	305	1680	512	840	256	560	171	1680	512

Display Site-Vertical



Display Site-1/3 Offset



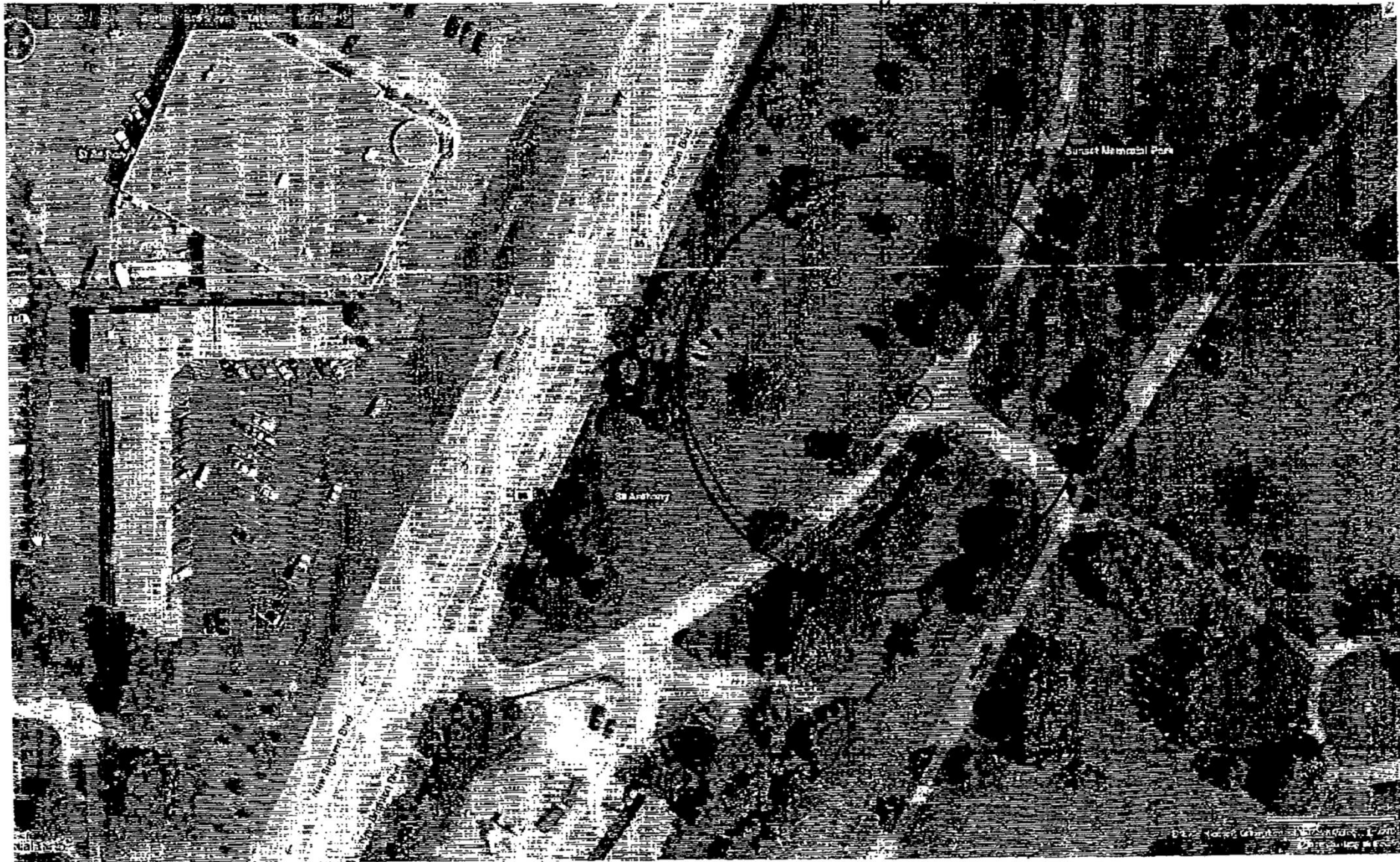
Site Plan

- Should include:
 - Discharge site location
 - Display site location, satellite map preferred
 - Location of roads, buildings, waterways
 - North arrow
 - Spectator locations

Shoot site ⑧

4" max 280F

August 2nd, 2008



FAX NO. : 95287332859

JUL. 22 2008 03:39PM PG

Discharge Location
Display Location
Locations of buildings and roads
North Arrow
Firework Storage Locations
Spectator locations

Shoot site ⑧
4th May 280F
August 2nd, 2008



A: Discharge site

B: Dud shell impact site

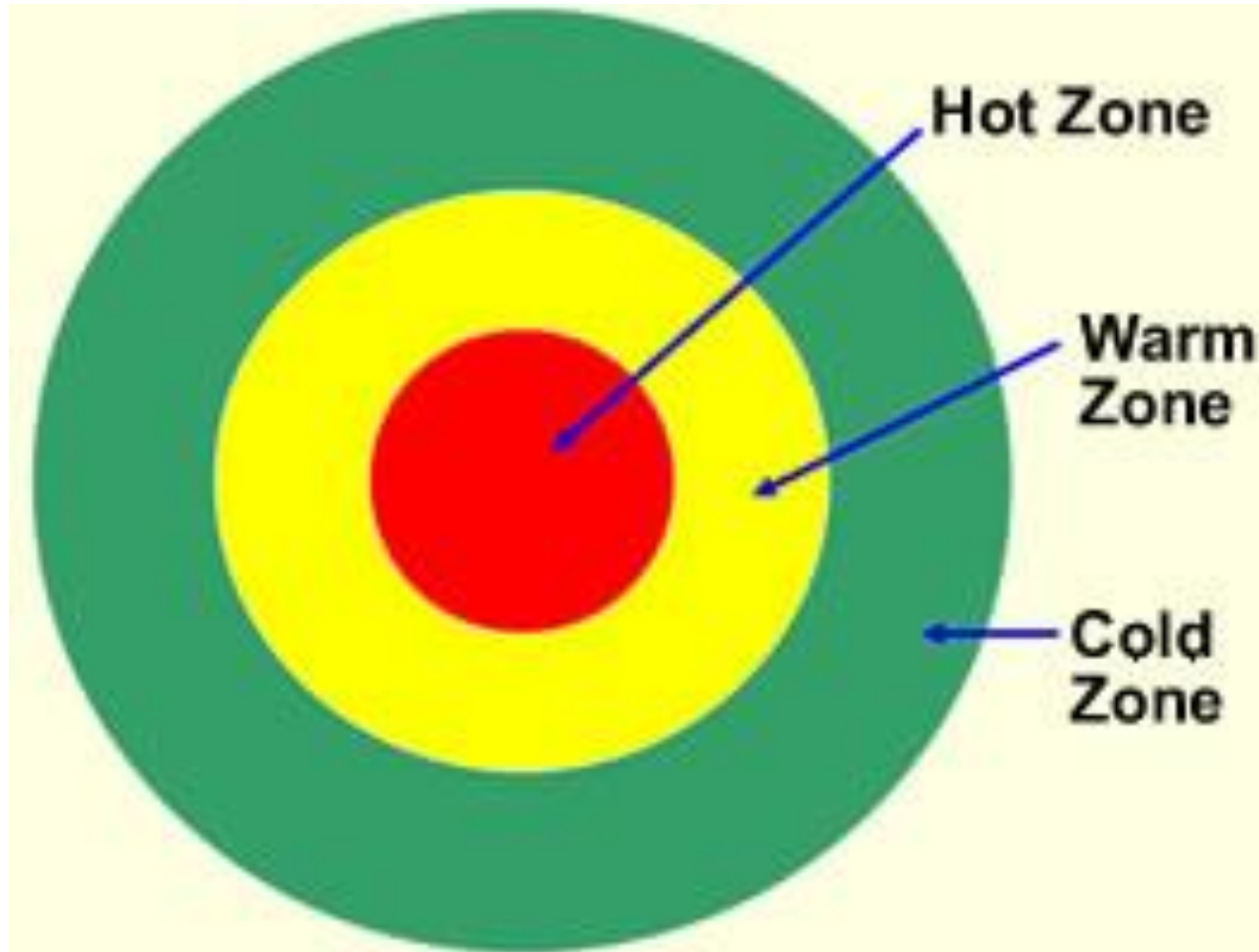
280 foot radius

100 ft
50 m

Imagery ©20



Display Site: Haz-Mat and Safety Officer



PPE

- Head protection
- Eye protection
- Hearing protection
- Foot protection
- Full length cotton, wool or flame resistant clothing

* Firefighting PPE may not be appropriate

Display Site

- Area including the discharge area (hot zone) and separation from spectator viewing areas (warm zone)
- No spectators or parking allowed in display site
 - This includes firefighters and fire trucks!
- Structures (unoccupied) may be within display site with supervising operator, AHJ and building owner approval
- Special hazards (Jails, Hospitals, Fuel tanks, etc) double the discharge site radius

Discharge area

- This is where the mortars (guns) are located
- Could have a single or multiple discharge areas within a single display site
- Typically located in the middle of the display site
 - 1/3 offset
- Should be on flat, even terrain with good ingress/egress and free of combustibles
- No overhead obstructions within 25 feet of aerial shells

Discharge Area

- Ready boxes shall be at least 30 feet from guns, in a portable, weather resistant, fire resistant and self closing or equivalent container



Mortars

- Shall only be constructed of steel, cardboard, fiberglass or HDPE
- Length of mortar determined by size of aerial shell
- Mortar tubes may or may not be reloaded, to include number of times reloaded, based upon construction

Mortar Reloading

- Mortars up to 6" can be reloaded up to 7 times
- Does not apply to steel mortars
- Reloaded shells shall not be chain fused



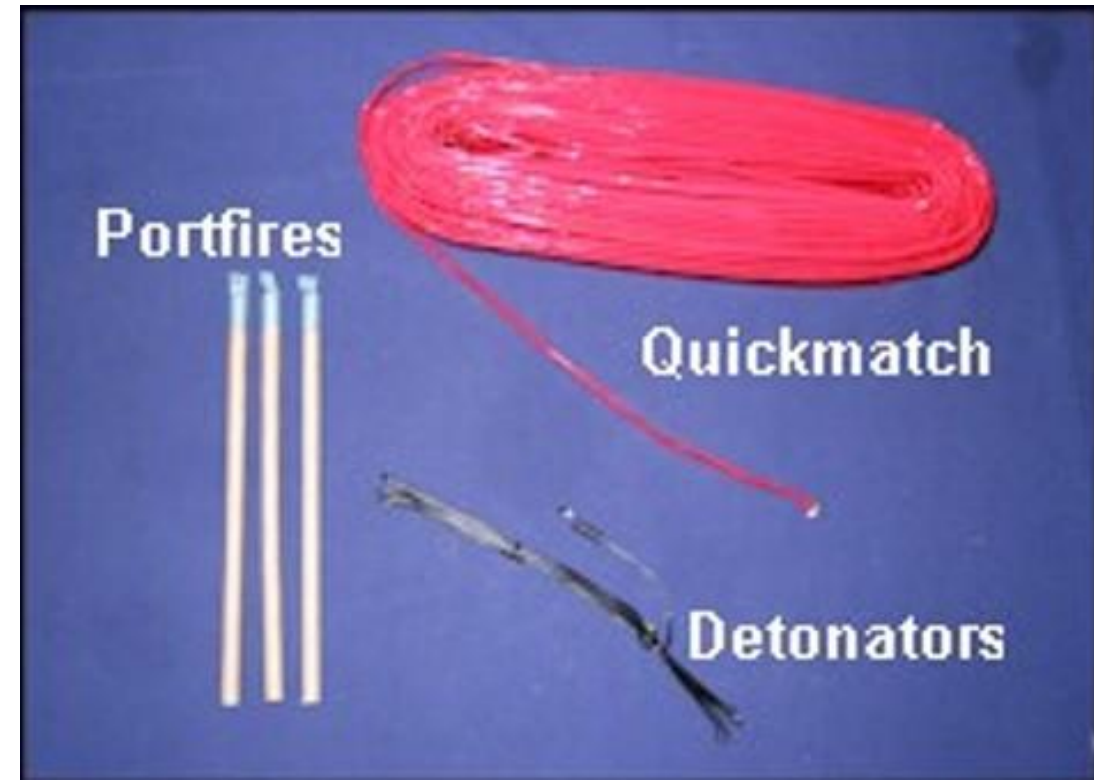
Electric Ignition

- Properly shunted and secured
- Disconnected from control box while loading
- At least 75 feet from mortars



Manual Ignition

- Limited to 6" aerial shells or less in racks
- Up to 8" aerial shells when mortars are buried
- Safety caps on fuses are required



Mortar Rack-Good



Mortar Rack-Bad



Buried Mortars-Good



Buried Mortars-Bad



Buried Mortars-Bad Fill



Floating and Elevated Platforms

- Additional site requirements to include:
 - Platform sizes
 - Additional egress routes
- NFPA 1123 Chapter(s) 6 and 7 specify requirements

This is not a floating platform



Other On-Site Considerations

- Shall be done every time
- FD access
- Fire extinguisher(s)
- Site security
 - Access before and after the fireworks arrive

AHJ Authority

- The AHJ has the authority to stop or suspend display due to:
 - Hazardous conditions
 - Crowd control
 - Inclement weather, or...
 - To correct your mistake
- Show shall not resume until corrected

AHJ Authority Example

- 150th County Anniversary
- Sponsored by County Fair Board
- Fairgrounds within city limits
- Fair board and city council approved permit
- Local fire chief not involved with permit process
- Day of display, fire chief found out about display, looked at the site and cancelled event

FENCE



barrage units

fence

250'



set place

75'

FENCE

GRANDSTAND
(spectator area)



Grandstands

Discharge Site

Residential Home

Barn

Barn

LP-Gas Tank

Retail Sales of Consumer Fireworks

MN Statute 624.20

- Firework device – audible or visual effect by means of detonation or deflagration
- If it flies through the air or explodes, it's illegal
- Composition weights:
 - 500 grams per device
 - 75 grams per tube
 - 100 grams per sparker
 - Gram weights for toy caps (CPSC)

“Cold Spark” Fountains



Annual License Fees

- Single commodity seller - \$350/yr
- Multi-commodity seller - \$100/yr
- May not impose any additional fees, bonding or insurance unless,
 - Same fees, bonding or insurances are applied to all entities
- Consumer fireworks are just a commodity

Statute vs. Rule Quantities

- MS 624.20 Subd. 1(d)(3) references NFPA 1124, 2003 Ed.
- Ch. 7 exempt quantities
 - 125# N.E.W. or 500# gross/net non-sprinklered
 - 250# N.E.W. or 1,000# gross/net sprinklered
- What do we do for quantities exempted by NFPA 1124, 2003 Ed.?

Consumer Fireworks (CPSC) are just a commodity

- If under the exempt Gross/Net shipping weight, the MSFC treats them like any other consumer commodity (Chapter 50 and 56 exceptions)
- If over the exempt weight, NFPA 1124, 2003 Ed. Ch.7 is applicable

Fire Code Requirements-Permanent Structures

- MSFC Section 314.3 Highly combustible goods shall not be within:
 - 5 feet of exits
 - Covered and open malls
 - Exit access aisles
 - Corridors
- All other occupancy requirements enforced

“Required” Aisle Width



Fire Code Requirements – Temporary Structures

- MSFC Chapter 31
 - Section 3103.8: Access, location and parking
 - Section 3103.12: Means of egress
 - Section 3104.2: Flame treatment
 - Section 3107: Operational requirements

Consumer Fireworks Complaints

- Consumer fireworks complaints are a local jurisdiction issue
- When the SFMD does get a complaint:
 - Explain the law
 - Explain why law enforcement is “doing nothing”
 - Refer them to the local authorities

POST Affidavit

- Bob Rexeisen
- Robert.Rexeisen@state.mn.us
- Confirmation Code: SFMD0519



Questions

Website: <https://sfm.dps.mn.gov>



Thank you

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